Indiana Crop & Weather Report

United States Dept of Agriculture

Indiana Agricultural Statistics | 1435 Win Hentschel Blvd. Suite B105 | West Lafayette, IN 47906-4145 (765)494-8371

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CROP REPORT FOR WEEK ENDING JULY 25

AGRICULTURAL SUMMARY

crop reporters indicate conditions have been mostly favorable for pollination of corn this season, according to Indiana Agricultural Statistics. Cooler temperatures and timely precipitation have helped. Soybean plants are improving and also making good progress as pods are forming on many of the early planted fields. Much needed rain helped development of major crops and relieved dry soil conditions in most areas of the state last week. Many farmers were attending local county fairs.

FIELD CROPS REPORT

There were 5.0 **days suitable for fieldwork**. Ninety-four percent of the corn acreage has **silked** compared to 54 percent last year and 76 percent for the average. Twenty-four percent of the corn acreage has reached the **dough** stage compared with 6 percent last year and 13 percent for the average. Corn **condition** improved and is rated 77 percent good to excellent compared with 55 percent last year at this time.

Seventy-seven percent of the soybean acreage is **blooming** compared with 50 percent last year and 72 percent for the average. Thirty-six percent of the soybean acreage is **setting pods** compared with 11 percent last year and 27 percent for the average. Soybean **condition** improved and is rated 72 percent good to excellent compared with 51 percent last year at this time.

Virtually all of the winter wheat acreage has been **harvested** compared with 94 percent last year and 99 percent for the average. Second cutting of **alfalfa hay** is 85 percent complete compared with 70 percent last year and 88 percent for the average.

Other activities during the week were repairing equipment, harvesting mint, scouting fields, mowing roads and pastures, moving grain to market, hauling manure and taking care of livestock.

LIVESTOCK, PASTURE AND RANGE REPORT

Pasture condition is rated 15 percent excellent, 59 percent good, 20 percent fair, 5 percent poor and 1 percent very poor. Livestock are in mostly good condition.

CROP PROGRESS TABLE

Crop	This Week	Last Week	Last Year	5-Year Avg
	Percent			
Corn Silked	94	82	54	76
Corn in Dough	24	10	6	13
Soybeans Blooming	77	67	50	72
Soybeans Podding	36	22	11	27
Alfalfa Second Cutting	85	68	70	88
Winter Wheat Harvested	100	99	94	99

CROP CONDITION TABLE

Crop	Very Poor	Poor	Fair	Good	Excel-lent
			Percent		
Corn	3	4	16	53	24
Soybean	3	5	20	52	20
Pasture	1	5	20	59	15

SOIL MOISTURE & DAYS SUITABLE FOR FIELDWORK TABLE

	This Week	Last Week	Last Year
		Percent	
Topsoil			
Very Short	2	1	1
Short	12	14	5
Adequate	79	76	65
Surplus	7	9	29
Subsoil			
Very Short	1	1	1
Short	12	15	7
Adequate	82	78	66
Surplus	5	6	26
Days Suitable	5.0	5.0	4.5

CONTACT INFORMATION

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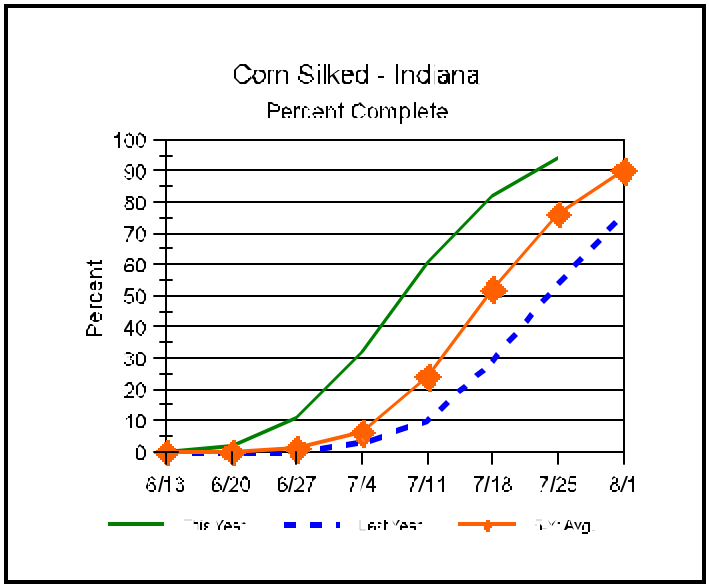
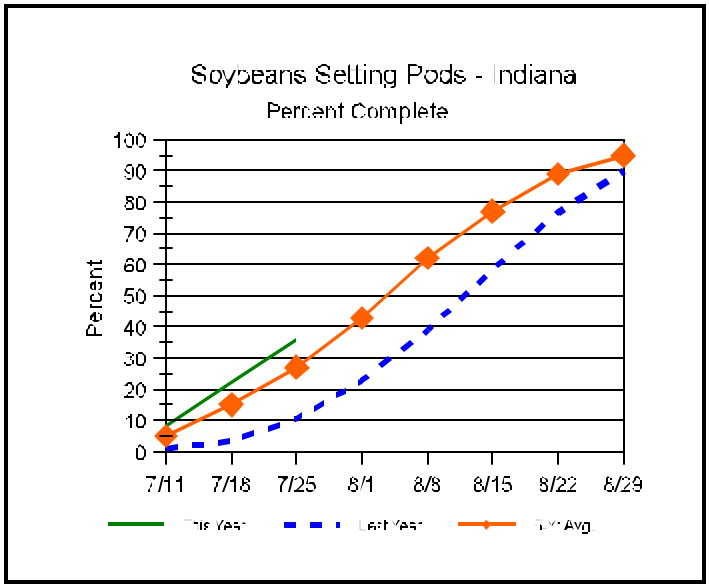
http://www.nass.usda.gov/in/index.htm

Crop Progress





Other Agricultural Comments And News

Estimating Corn Grain Yield Prior to Harvest

Fancy colored yield maps are fine for verifying grain yields at the end of the harvest season, but bragging rights for the highest corn yields are established earlier than that down at the Main Street Cafe, on the corner of 5th and Earl. Some patrons of the cafe begin "eyeballing" their yields as soon as their crops reach "roasting ear" stage. Some of the guys there are pretty good (or just plain lucky) at estimating yields prior to harvest, while the estimates by others are not even close to being within the proverbial ballpark. Interestingly, they all use the same procedure referred to as the **Yield Component Method**.

Other pre-harvest yield prediction methods exist (Lauer, 2002; Thomison, 2003), but the **Yield Component Method** is probably the most popular because it can be used well ahead of harvest; as early as the so-called "roasting ear" or milk (R3) stage of kernel development. Under “normal” conditions, the kernel milk stage occurs about 18 to 22 days after pollination is complete (Nielsen, 2004a). Estimates made earlier in the kernel development period risk being overly optimistic if subsequent severe stresses cause unforeseen kernel abortion (Nielsen, 2004b).

The **Yield Component Method** is based on the premise that one can estimate grain yield from estimates of the yield components that constitute grain yield. These yield components include number of ears per acre, number of kernel rows per ear, number of kernels per row, and weight per kernel. The first three yield components (ear number, kernel rows, kernels/row) are easily measured in the field.

Final weight per kernel obviously cannot be measured until the grain is mature (kernel black layer) and, realistically, at harvest moisture. Consequently, an average value for kernel weight, expressed as 90,000 kernels per 56 lb bushel, is used as a proverbial "fudge factor" in the yield estimation equation.

Crop uniformity greatly influences the accuracy of any yield estimation technique. The less uniform the field, the greater the number of samples that should be taken to estimate yield for the field. There is a fine line between fairly sampling disparate areas of the field and sampling randomly within a field so as not to unfairly bias the yield estimates up or down.

1. At each estimation site, measure off a length of row equal to 1/1000th acre. For 30-inch (2.5 feet) rows, this equals 17.4 feet.

   TIP: For other row spacings, divide 43,560 by the row spacing (in feet) and then divide that result by 1000 (e.g., [43,560/2.5]/1000 = 17.4 ft).

2. Count and record the number of ears on the plants in the 1/1000th acre of row that you deem to be harvestable.

   TIP: Do not count dropped ears or those on severely lodged plants unless you are confident that the combine header will be able to retrieve them.

3. For every fifth ear in the sample row, record the number of complete kernel rows per ear and average number of kernels per row. Then multiply each ear's row number by its number of kernels per row to calculate the total number of kernels for each ear.

   TIPS: Do not sample nubbins or obviously odd ears, unless they fairly represent the sample area. If row number changes from butt to tip (e.g., pinched ears due to stress), estimate an average row number for the ear. Don't count the extreme butt or tip kernels, but rather begin and end where you perceive there are complete "rings" of kernels around the cob. Do not count aborted kernels. If kernel numbers are uneven among the rows of an ear, estimate an average value for kernel number per row.

4. Calculate the average number of kernels per ear by summing the values for all the sampled ears and dividing by the number of ears.

   EXAMPLE: For five sample ears with 480, 500, 450, 600, and 525 kernels per ear, the average number of kernels per ear would be (480 + 500 + 450 + 600 + 525) divided by 5 = 511.

(Continued on Page 4)

Weather Information Table

Week ending Sunday July 25, 2004

Station	Past Week Weather Summary Data							Accumulation				
	Air Temperature				Precip.		Avg 4 in Soil	April 1, 2004 thru July 25, 2004				
								Precipitation			GDD Base 50°F	
	Hi	Lo	Avg	DFN	Total	Days	Temp	Total	DFN	Days	Total	DFN
Northwest (1)												
Chalmers_5W	93	55	73	-2	0.16	1	72	20.54	+6.10	40	1744	-15
Valparaiso_AP_I	91	53	71	-3	1.12	2		13.24	-2.08	45	1634	+57
Wanatah	91	51	71	-2	1.92	1	78	13.13	-1.71	47	1543	+37
Wheatfield	91	55	72	-2	1.94	3		25.62	+11.11	53	1613	+61
Winamac	90	56	71	-2	1.53	3	76	17.08	+2.54	51	1671	+58
North Central (2)												
Plymouth	89	55	71	-4	1.83	2		16.18	+0.94	49	1608	-74
South_Bend	88	55	72	-2	1.44	2		15.56	+1.31	50	1701	+141
Young_America	89	56	72	-3	0.41	3		18.04	+4.05	44	1775	+127
Northeast (3)												
Columbia_City	89	55	71	-2	2.21	4	75	16.48	+2.15	54	1612	+123
Fort_Wayne	90	55	72	-3	2.52	3		17.81	+4.61	49	1746	+108
West Central (4)												
Greencastle	88	55	72	-5	0.25	3		17.73	+1.27	48	1780	-88
Perrysville	87	55	72	-3	0.55	3	79	15.83	+0.06	40	1949	+200
Spencer_Ag	87	57	72	-4	1.89	3		21.44	+4.59	53	1912	+162
Terre_Haute_AFB	91	58	74	-3	0.45	3		13.91	-2.06	44	2073	+207
W_Lafayette_6NW	90	51	72	-3	0.41	2	82	19.20	+4.70	36	1792	+143
Central (5)												
Eagle_Creek_AP	89	60	74	-3	2.22	2		15.51	+0.68	48	1965	+118
Greenfield	91	57	73	-3	1.35	2		16.71	+0.48	50	1870	+109
Indianapolis_AP	89	60	74	-2	3.58	2		20.93	+6.10	46	2053	+206
Indianapolis_SE	89	57	73	-4	2.71	2		17.21	+1.80	42	1887	+61
Tipton_Ag	90	55	71	-3	1.15	2	79	15.30	+0.68	46	1717	+122
East Central (6)												
Farmland	89	54	70	-3	1.25	2	71	15.71	+1.16	47	1756	+205
New_Castle	88	52	69	-5	1.32	2		17.62	+1.67	39	1560	-25
Southwest (7)												
Evansville	91	63	77	-3	1.53	3		19.05	+3.51	42	2349	+177
Freelandville	90	57	74	-4	0.90	3		17.67	+1.59	44	2088	+158
Shoals	90	60	74	-2	2.04	3		22.12	+4.75	48	2089	+234
Stendal	91	62	75	-3	0.69	3		19.23	+2.00	45	2233	+203
Vincennes_5NE	91	57	76	-1	0.37	2	77	18.37	+2.29	52	2179	+249
South Central (8)												
Leavenworth	89	62	74	-2	1.03	2		25.85	+8.32	51	2105	+255
Oolitic	89	60	73	-2	1.55	2	78	21.05	+4.60	52	1969	+203
Tell_City	90	65	77	-1	0.44	1		23.84	+6.41	45	2371	+315
Southeast (9)												
Brookville	92	58	73	-2	0.96	2		13.98	-1.83	41	1961	+299
Milan_5NE	90	58	73	-2	1.51	4		20.17	+4.36	67	1944	+282
Scottsburg	89	59	73	-4	0.35	2		28.82	+12.57	49	2051	+138

DFN = Departure From Normal (Using 1961-90 Normals Period).
GDD = Growing Degree Days.
Precipitation (Rainfall or melted snow/ice) in inches.
Precipitation Days = Days with precip of .01 inch or more.
Air Temperatures in Degrees Fahrenheit.

The above weather information is provided by AWIS, Inc.
For detailed ag weather forecasts and data visit the AWIS home page at
www.awis.com or call toll free at 1-888-798-9955.

5. Estimate the yield for each site by multiplying the ear number by the average number of kernels per ear, then dividing that result by 90. The value of '90' represents the average number of kernels (90,000) in a bushel of corn.

   TIP: Use a lower value (e.g., 80) if grain fill conditions have been excellent (larger kernels, fewer per bushel) or a larger value (e.g., 100) if grain fill conditions have been stressful (smaller kernels, more per bushel).

Remember that this method for estimating pre-harvest grain yield in corn indeed provides only an estimate. Since kernel size and weight will vary depending on hybrid and environment, this yield estimator should only be used to determine "ballpark" grain yields. Yield will be overestimated in a year with poor grain fill conditions (e.g., low kernel size and weight from a drought year) and underestimated in a year with excellent grain fill conditions (e.g., larger kernel size and weight from non-stress grain fill periods). You can try to improve the yield estimation for unusual grain fill conditions by adjusting the estimation formula . For example, if you believe that kernel weight will be lower due to stress during grain fill, you may elect to replace the value of "90" in the equation with "100" to reflect the potential for smaller and lighter kernels (i.e., more kernels per 56 lb. bushel). Conversely, in a good crop year, you may elect to replace the value of "90" in the equation with "80" to reflect the potential for larger and heavier kernels (i.e., fewer kernels per 56 lb. bushel).

Recognize that the **Yield Component Method** for estimating corn grain yield is probably only accurate within plus or minus 30 bushels of the actual yield. Obviously, the more samples you measure within a field, the more accurately you will "capture" the variability of yield throughout the field. Use the yield estimates obtained by this method for general planning purposes only.

*** Thanks to Emerson Nafziger, Univ. of Illinois, for suggested revisions to the kernel number calculations.*

Illinois Agronomy Handbook. 2004. **Estimating Corn Yields**. (An Online Calculator) Univ. of Illinois. Online at http://www.ag.uiuc.edu/iah/index.php?ch=ch2/est_corn_yield.html&m=CFAR. (URL verified 7/11/04, but temporarily off-line as of 7/18/04)

Lauer, Joe. 2002. **Methods for Calculating Corn Yield**. Agronomy Advice, Univ. of Wisconsin-Madison. Online at http://corn.agronomy.wisc.edu/AAdvice/2002/A033.pdf. (URL verified 7/11/04)

Nielsen, R.L. (Bob). 2004a. **Grain Fill Stages in Corn**. Corny News Network, Purdue Univ. Online at http://www.kingcorn.org/news/articles.04/GrainFill-0705.html. (URL verified 7/18/04)

Nielsen, R.L. (Bob). 2004b. **Yield Loss Potential During Grain Fill**. Corny News Network, Purdue Univ. Online at http://www.kingcorn.org/news/articles.04/GrainFillStress-0705.html. (URL verified 7/18/04)

Thomison, Peter. 2003. **Estimating Corn Yields Prior to Harvest**. C.O.R.N. Newsletter, Ohio State Univ. Online at http://corn.osu.edu/archive/2003/aug/03-28.html#linkc. (URL verified 7/11/04).

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